

SEMICONDUCTOR
TECHNICAL DATA

KTB772
EPITAXIAL PLANAR NPN TRANSISTOR

AUDIO FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING

FEATURES
- Complementary to KTD882.

DIM	MILLIMETERS
A	8.3 MAX
B	5.8
C	0.7
D	ø3.1± 0.1
E	3.5
F	11.0± 0.3
G	2.9 MAX
H	1.0 MAX
J	1.9 MAX
K	0.75± 0.15
L	14.0 MIN
M	2.3± 0.1
N	0.75± 0.15
O	1.6
P	3.4 MAX

1. EMITTER
2. COLLECTOR
3. BASE

TO－126

MAXIMUM RATINGS (Ta=25℃)

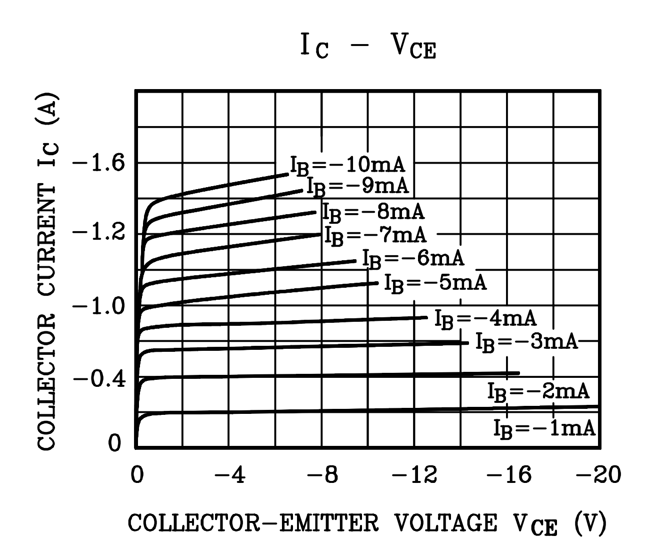
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-40	V
Collector-Emitter Voltage		V_{CEO}	-30	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current	DC	I_C	-3	A
	Pulse (Note)		-7	
Base Current (DC)		I_B	-0.6	A
Collector Power Dissipation	Ta=25℃	P_C	1.5	W
	Tc=25℃		10	
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃

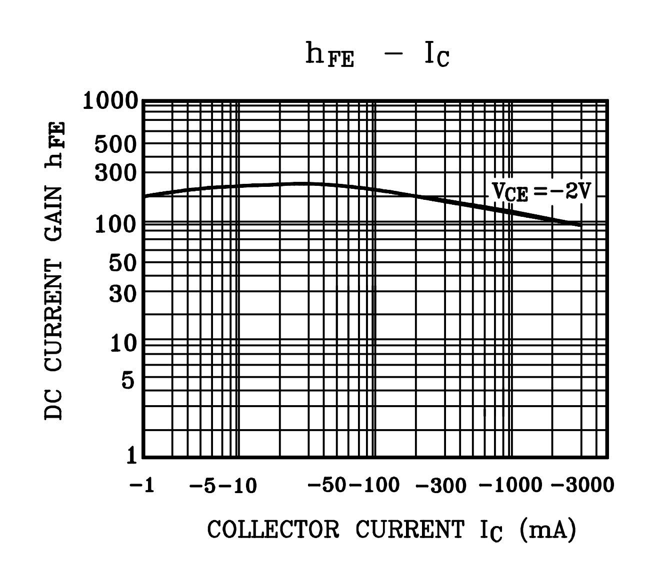
Note : Pulse Width ≦10mS, Duty Cycle≦50%.

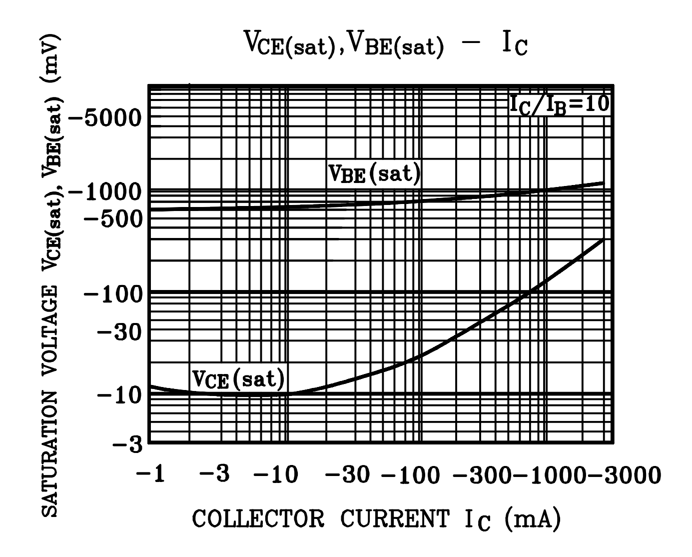
ELECTRICAL CHARACTERISTICS (Ta=25℃)

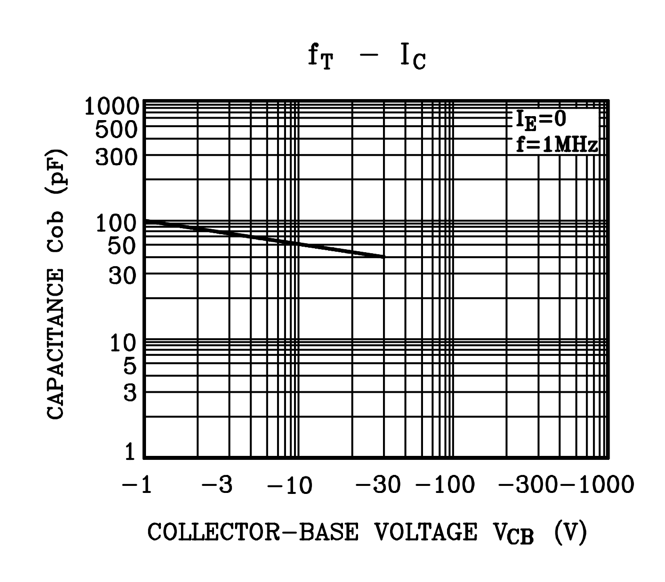
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-30V, I_E=0	-	-	-1	μA
Emitter-Cut-off Current	I_{EBO}	V_{EB}=-3V, I_C=0	-	-	-1	μA
DC Current Gain *	$h_{FE}(1)$	V_{CE}=-2V, I_C=-20mA	30	220	-	
	$h_{FE}(2)$ (Note)	V_{CE}=-2V, I_C=-1A	100	160	400	
Collector-Emitter Saturation Voltage *	$V_{CE(sat)}$	I_C=-2A, I_B=-0.2A	-	-0.3	-0.5	V
Base-Emitter Saturation Voltage *	$V_{BE(sat)}$	I_C=-2V, I_B=-0.2A	-	-1.0	-2.0	V
Current Gain Bandwidth Product	f_T	V_{CE}=-5V, I_C=-0.1A	-	80	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	55	-	pF

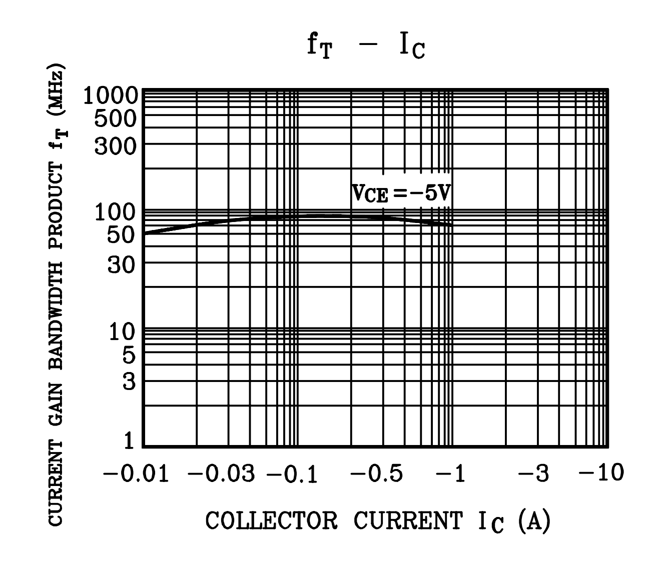
* Pulse Test : Pulse Width≦350μS, Duty Cycle≦2% Pulsed
Note: $h_{FE}(2)$ Classification O:100～200 , Y:160～320 , GR:200～400

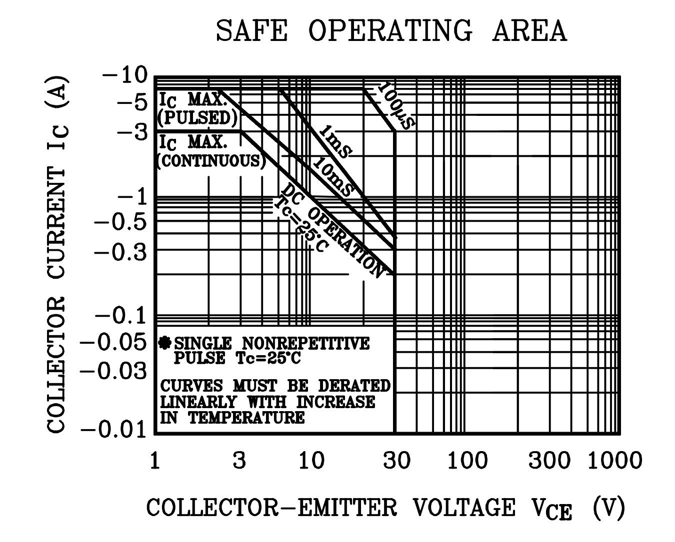

IC – VCE
COLLECTOR CURRENT IC (A)
IB=−10mA
IB=−9mA
IB=−8mA
IB=−7mA
IB=−6mA
IB=−5mA
IB=−4mA
IB=−3mA
IB=−2mA
IB=−1mA
−1.6
−1.2
−1.0
−0.4
0
0
−4
−8
−12
−16
−20
COLLECTOR−EMITTER VOLTAGE VCE (V)

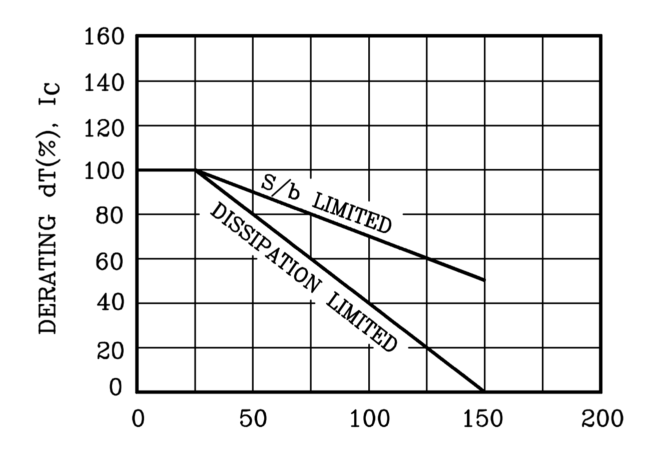

hFE – IC
DC CURRENT GAIN hFE
VCE=−2V
1000
500
300
100
50
30
10
5
1
−1
−5−10
−50−100
−300
−1000
−3000
COLLECTOR CURRENT IC (mA)

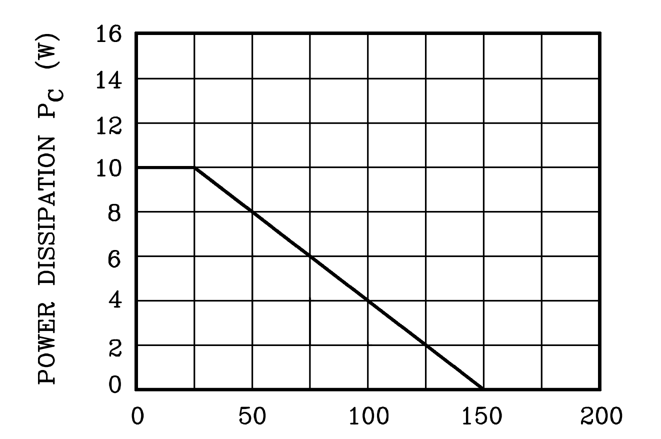

VCE(sat),VBE(sat) – IC
SATURATION VOLTAGE VCE(sat), VBE(sat) (mV)
IC/IB=10
VBE(sat)
VCE(sat)
−5000
−1000
−500
−100
−30
−10
−3
−1
−3
−10
−30
−100
−300−1000−3000
COLLECTOR CURRENT IC (mA)


fT – IC
CAPACITANCE Cob (pF)
IE=0
f=1MHz
1000
500
300
100
50
30
10
5
3
1
−1
−3
−10
−30
−100
−300−1000
COLLECTOR−BASE VOLTAGE VCB (V)


fT – IC
CURRENT GAIN BANDWIDTH PRODUCT fT (MHz)
VCE=−5V
1000
500
300
100
50
30
10
5
3
1
−0.01
−0.03
−0.1
−0.5
−1
−3
−10
COLLECTOR CURRENT IC (A)


SAFE OPERATING AREA
COLLECTOR CURRENT IC (A)
IC MAX. (PULSED)
IC MAX. (CONTINUOUS)
100μS
1mS
10mS
DC OPERATION Tc=25°C
SINGLE NONREPETITIVE PULSE Tc=25°C
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE
−10
−5
−3
−1
−0.5
−0.3
−0.1
−0.05
−0.03
−0.01
1
3
10
30
100
300
1000
COLLECTOR−EMITTER VOLTAGE VCE (V)


DERATING dT(%), I_C
160
140
120
100
80
60
40
20
0
0
50
100
150
200
S/b LIMITED
DISSIPATION LIMITED


POWER DISSIPATION P_C (W)
16
14
12
10
8
6
4
2
0
0
50
100
150
200